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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/581,752	12/20/2006	Bhavana Deore	74618-41 /sir	8507

7380 7590 02/03/2010

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CANADA

EXAMINER	
FANG, SHANE	

ART UNIT	PAPER NUMBER
1796	

NOTIFICATION DATE	DELIVERY MODE
02/03/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

us.mail@smart-biggar.ca

Office Action Summary	Application No.	Applicant(s)	
	10/581,752	DEORE ET AL.	
	Examiner	Art Unit	
	SHANE FANG	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 December 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) *10-14* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *05 June 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *02/07/07,07/28/09*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

All of the X-references cited in the International Search Report have been considered. The most pertinent of these references have been applied below.

Election/Restrictions

The applicant has elected Group I (claims 1-9) with traverse in response to the previous action, and argued it would not place an undue burden. The examiner disagrees. The restriction requirement was based on the principle of lack of unity. The search for process claims would involve search in different subclass and structure search, such as polyaniline, monomers thereof, and different methods of preparing thereof such as electrolytical polymerization, oxidation polymerization, and other methods. The examiner affirms the undue burden exists.

This restriction is made FINAL. See previous action for the reasons of applying restriction.

Claim Rejections - Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., In re Berg, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); In re Goodman, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); In re Longi, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); In re Van Ornum, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); In re Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and In re Thorington, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory

double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-2 and 5 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-12 of copending Application No. 12/161235. This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

As to claims 1-2 and 5, 235' discloses a poly(3-aminophenylboronic acid) prepared by polymerizing 3-aminophenylboronic acid with NaF, oxidating agent, HCl, and etc. (claims 1-2, 5, 7-9, and 12). Based on its structure, the poly(3-aminophenylboronic acid) is inherently capable of converting between a water-soluble self-doped form and a water-insoluble non-self doped from by a reversible chemical reaction. The reference is silent on the hardness of instant claim 2. However, In view of the substantially identical composition, it appears that the adduct would have inherently possessed the claimed properties. See MPEP § 2112. In this particular case, no chemical or structural difference is shown between claimed and disclosed membrane materials. The disclosed poly(3-aminophenylboronic acid) would inherently exhibit aforementioned claimed hardness.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

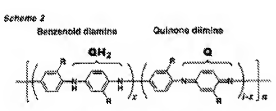
A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-2 and 5-7 rejected under 35 U.S.C. 102(b) as being anticipated by Shoji et al. (JACS 2002, 124, 12486-12493) listed on ISP and IDS.

As to claims 1-2 and 5-7, Shoji et al. discloses a poly(3-aminophenylboronic acid) capable of converting between a water-soluble self-doped form and a water-insoluble non-self doped from by a reversible chemical reaction by exposing poly(3-aminophenylboronic acid) in D-fructose in PBS based on the following schemes (Pg. 12487, Experimental Section, 12488, col. 1, 12489, Fig. 2):

, and

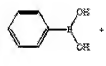


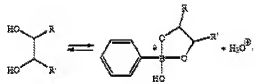
. The resultant polymer meets the structures of claim 6. Although the reference is silent on the hardness of instant claims 2 and 7, these two claims are rejected based on the same rationale as applied in above ¶2.

5. Claims 1-2 and 5-7 rejected under 35 U.S.C. 102(b) as being anticipated by Freund et al. (US 20020029979) listed on ISP and IDS.

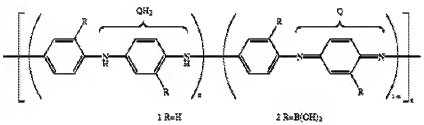
As to claims 1-2 and 5-7, Freund et al. discloses a poly(3-aminophenylboronic acid) capable of converting between a water-soluble self-doped form and a water-

insoluble non-self doped from by a reversible chemical reaction by exposing poly(3-aminophenylboronic acid) in D-fructose in PBS based on the following schemes (0029-31, 0046-48, Fig. 2):





,  , and



1 R=H 2 R=B(OH)2

. The resultant polymer meets the structures of claim 6. Although the reference is silent on the hardness of instant claims 2 and 7, these two claims are rejected based on the same rationale as applied in above ¶2.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 3-4 and 8-9 rejected under 35 U.S.C. 103(a) as being unpatentable over Shoji et al. (JACS 2002, 124, 12486-12493) listed on IDS and ISP in view of Mattoso et al. (Synthetic Metals, 68 (1994), 1-11) listed on IDS.

Disclosure of Shoji et al. is adequately set forth in ¶4 and is incorporated herein by reference.

Shoji et al. is silent on the MW of said polyanilines as recited in claims 3-4 and 8-9.

Mattoso et al. discloses increasing the MW to 64-90k of polyanilines by successive oxidation and further increasing the MW to 156k or 160k by using polyvinylsulfonic acid or ammonium peroxydisulfate for oxidative polymerization (Pg. 1, col. 1-2). Mattoso et al. teaches having high MW is highly desirable (Pg. 1, col. 1). One of ordinary skill in the art would obviously recognize to increase MW of a polymer for improving its film forming capability and mechanical strength.

Therefore, as to claims 3-4 and 8-9, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the polyaniline disclosed by Shoji et al. and increased MW to the claimed ranges in view of Mattoso et al., because the resultant higher MW polyaniline would yield improved film forming capability and mechanical strength.

8. Claims 3-4 and 8-9 rejected under 35 U.S.C. 103(a) as being unpatentable over Freund et al. (US 20020029979) listed on IDS and ISP in view of Mattoso et al. (Synthetic Metals, 68 (1994), 1-11) listed on IDS.

Disclosure of Freund et al. is adequately set forth in ¶5 and is incorporated herein by reference.

Freund et al. is silent on the MW of said polyanilines as recited in claims 3-4 and 8-9.

Mattoso et al. discloses increasing the MW to 64-90k of polyanilines by successive oxidation and further increasing the MW to 156k or 160k by using polyvinylsulfonic acid or ammonium peroxydisulfate for oxidative polymerization (Pg. 1, col. 1-2). Mattoso et al. teaches having high MW is highly desirable (Pg. 1, col. 1). One of ordinary skill in the art would obviously recognize to increase MW of a polymer for improving its film forming capability and mechanical strength.

Therefore, as to claims 3-4 and 8-9, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the polyaniline disclosed by Freund et al. and increased MW to the claimed ranges in view of Mattoso et al., because the resultant higher MW polyaniline would yield improved film forming capability and mechanical strength.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SHANE FANG whose telephone number is (571)270-7378. The examiner can normally be reached on Mon.-Thurs. 8 a.m. to 6:30 p.m. EST.. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (571) 272-1302. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Sf

/RANDY GULAKOWSKI/
Supervisory Patent Examiner, Art Unit 1796